

Software Requirements Specification

Company : VSoft Technologies

Project : vsofttechnologies.com

Version : 1.0

Date : October 26, 2023

Author : Wes Technologies

Status : Draft

1. Introduction

1.1 Purpose

This document describes the functional and non-functional requirements for the development of a dynamic web portal for VSOFT Technologies. The primary purpose of this portal is to serve as a centralized platform for users to browse, select, and request academic projects, and to learn about and apply for internships and corporate training programs offered by the company.

1.2 Intended Audience and Reading Suggestions

- **Project Stakeholders & Management:** To understand the project's scope, features, and especially the reporting and analytics capabilities for business decision-making.
- **Power BI / Data Analysis Team:** To understand the data model, key metrics, and requirements for building and maintaining the interactive dashboards.
- **Project Managers:** To plan and manage the development lifecycle, ensuring data points required for analytics are captured.
- **UI/UX Designers:** To design the user interface based on the outlined features.
- **Developers (Front-end & Back-end):** To implement the system as described, with a focus on creating the necessary data API endpoints for Power BI.
- **Testers (QA):** To create test plans and validate the system against these requirements, including data accuracy for reports.

1.3 Project Scope

The scope of this project includes:

- A public-facing website with information about VSOFTECH Technologies.
- A dynamic project catalog categorized by degree, branch, project type, and domain.
- A user registration and authentication system.
- A feature for users to submit custom project ideas/requirements.
- A secure admin panel for content management (CRUD operations for projects, viewing user submissions and updating its status).
- Sections for promoting and managing internship and corporate training inquiries.
- The system will be developed using the PHP programming language with MVC architecture, MySQL database, and front-end technologies (HTML, CSS, and JavaScript).
- Mobile application development (though the website will be responsive).

Future Enhancements:

- Online payment integration for project purchases.
- A full-fledged Learning Management System (LMS) for training.
- Real-time chat functionality.

2. Overall Description

2.1 User Needs

- Users need an easy way to find relevant project ideas and understand their requirements.
- Users need a channel to propose their own project ideas if they can't find a suitable one.
- The company (Admin) needs an efficient way to manage and update a large inventory of project titles and descriptions.
- The company needs to collect and manage leads from users interested in projects, internships, and training.

2.2 Assumptions and Dependencies

- Users have a modern web browser with JavaScript enabled.
- The server will have PHP (v7.4 or higher) and MySQL (v5.7 or higher) installed.
- The admin will be technically proficient enough to upload well-formatted Excel files.
- Internet connectivity is required for both users and admins.

3. System Features and Requirements

3.1 Public Website (Front-end)

3.1.1 Home Page

- FR1: Slider/Banner showcasing key services (Projects, Internships, and Training).
- FR2: Featured Project Titles section (random or manually curated).
- FR3: Statistics counter (e.g., "5000+ Projects Delivered", "1000+ Users Trained").
- FR4: Testimonials from previous users/clients.
- FR5: Quick links to key sections (Services, Contact, Login/Register).
- FR6: Call-to-Action (CTA) buttons ("Browse Projects", "Apply for Internship").

3.1.2 about Us Page

- FR7: Company history, mission, and vision statements.
- FR8: Team section with photos and bios of key team members.
- FR9: Company achievements and milestones.

3.1.3 Services Page

- FR10: Detailed descriptions of services:
 - ✓ Academic Project Guidance (B.Tech, M.Tech, MBA, MCA,etc..)
 - ✓ Internship Programs (summer, winter, virtual)
 - ✓ Corporate Training Programs

3.1.4 Projects Module (Enhanced)

- FR11: Hierarchical browsing as specified (Degree -> Branch -> Type (Mini/Major) -> Domain -> Titles).
- FR12: Search Functionality: A global search bar to search for projects by title, keyword, or technology.
- FR13: Filtering: Filter projects within a category by technologies (e.g., Python, Java, TensorFlow), complexity level, etc.
- FR14: Project Detail Page: For each title, display:
 - ✓ Title, Detailed Description, Prerequisites/Technologies Used.
 - ✓ Downloadable PDF of the research article/synopsis.
 - ✓ "Submit Custom Requirement" button (links to form for logged-in users).
 - ✓ "I'm Interested" button to notify admin (leads to a form and generates an email).

3.1.5 Internships & Corporate Page

- FR15: List available internship domains (Web Dev, Data Science, etc.) with descriptions.
- FR16: Details about corporate training programs and modules.
- FR17: Inquiry form for both internships and training (captures: Name, Email, Phone, Course, Domain of Interest, and Message).

3.1.6 Contact Us Page

- FR18: Company address, phone number, email.
- FR19: Interactive Google Map.
- FR20: Contact form (Name, Email, Subject, Message).

3.1.7 User Authentication

- FR21: User Registration (Name, Email, Password, Phone Number, University/College, Branch, Year of Study).
- FR22: User Login/Logout.
- FR23: Password reset functionality via email.

3.2 User Dashboard (After Login)

- FR24: Dashboard overview.
- FR25: View and edit own profile.
- FR26: Submit Custom Requirement Form: (Project Title, Description, Required Technologies, Branch, Deadline, Upload Reference Documents).
- FR27: View the status of their submitted custom requirements (e.g., Submitted, Under Review, Approved, and Rejected).
- FR28: View a history of projects they have shown interest in.

3.3 Admin Panel (Back-end)

- FR29: Secure Admin Login with default credentials (to be changed on first login).
- FR30: Dashboard with analytics: Total Projects, Total Users, New Custom Requirements, etc.

3.3.1 Project Management (CRUD)

- FR31: Add Project Individually: Form to add a single project (defining all hierarchy levels and details).
- FR32: Bulk Upload via Excel: Parse an Excel sheet and insert projects into the database. Handle errors for duplicate entries or invalid data.
- FR33: View, Edit, and Delete existing projects.

3.3.2 User Management

- FR34: View list of all registered users.
- FR35: Redirect to Call and Send Email for Contact User.

3.3.3 Custom Requirements Management

- FR36: View all custom requirements submitted by users in a list or table.
- FR37: View details of each submission.
- FR38: Update the status of each requirement (e.g., Contacted, Working, and Completed).
- FR39: Delete requirements.

3.3.4 Inquiry Management

- FR40: View inquiries from the Contact, Internship, and Training forms.
- FR41: Mark inquiries as contacted/resolved.

3.3.5 Content Management

- FR42: Admin shall be able to manage all dynamic content on the website from the admin panel without touching the codebase. This includes:

FR42.1: Home Page Management

- Manage multiple banner slides (Image, Tagline, Sub-text, and CTA Button Link).
- Update the statistics counter numbers (e.g., "5000+ Projects delivered").
- Manage the "Featured Projects" section (select which projects to feature).

FR42.2: About Us Page Management

- Manage the team members: Add, Edit, Delete entries with fields for (Full Name, Designation, Bio, Profile Picture, Social Media Links).

FR42.3: Services & Pricing Management

- Manage Pricing Packages: Add, Edit, Delete packages for services.
- Each package should have: Package Name (e.g., "Mini Project Basic"), Description/Benefits (list items), Original Price, Discounted Price, Duration

FR42.4: Contact Information Management

- Update the company's office address.
- Manage multiple contact numbers (Label e.g., "Landline", "Mobile", Number).
- Manage multiple email addresses (Label e.g., "Support", "Info", Address).
- Set office hours for different days.
- Update the Google Maps embed code/iframe or API key.

FR42.5: Testimonials Management

- Add, Edit, Delete customer reviews.

Each review shall have fields for:

- ✓ Customer Name
- ✓ Customer Photo (Optional Upload)
- ✓ Designation/Company
- ✓ Rating (1-5 Stars)
- ✓ Review Text
- ✓ Display Order

FR42.6: Search Engine Optimization (SEO) Management

- Set global default Meta Title, Meta Description, and Meta Keywords.
- Optionally, set custom meta tags for individual pages (Home, About, Services, etc.).

FR42.7: Media Management

- Upload images and files through a built-in media manager/uploader for use in the above content sections.

4. Non-Functional Requirements

- NFR1 (Performance): Page load times should be under 3 seconds. The project browsing and search should be optimized for speed.
- NFR2 (Usability): The interface must be intuitive and user-friendly. It should be responsive and work seamlessly on desktop, tablet, and mobile devices (using a framework like Bootstrap).
- NFR3 (Security):
 - Passwords must be hashed (using `password_hash()`).
 - SQL queries must use prepared statements to prevent injection.
 - Form inputs must be validated and sanitized on both client and server-side.
 - Admin panel access must be restricted to authorized IPs (optional but recommended).
- NFR4 (Reliability): The system should have an uptime of 99.5%. Proper error handling should prevent the display of raw error messages to users.
- NFR5 (Scalability): The database and code structure should be designed to handle a growing number of projects and users.

5. Technical Stack & Architecture

- Front-end: HTML5, CSS3, JavaScript (Bootstrap 5 framework recommended for responsiveness), AJAX for dynamic filtering.
- Back-end: PHP (Object-Oriented).
- Framework: MVC Framework.
- Database: MySQL.
- Server: XAMPP/WAMP for development, Linux-based server (e.g., Apache) for production.

Other Technologies:

- PHPExcel/PhpSpreadsheet library for Excel file handling.
- Google Maps JavaScript API for the map on the contact page.
- PHPMailer for robust email functionality (contact forms, password resets).

6. Database Schema (High-Level Overview)

1. Users

Column	Data Type	Constraints
id	INT (PK)	Auto Increment
name	VARCHAR	NOT NULL
email	VARCHAR	UNIQUE, NOT NULL
password_hash	VARCHAR	NOT NULL
phone	VARCHAR	NULLABLE
college	VARCHAR	NULLABLE
branch	VARCHAR	NULLABLE
year	VARCHAR/INT	NULLABLE
email_verified_at	TIMESTAMP	NULLABLE
remember_token	VARCHAR	NULLABLE
created_at	TIMESTAMP	DEFAULT CURRENT_TIME
updated_at	TIMESTAMP	DEFAULT CURRENT_TIME

2. Projects

Column	Data Type	Constraints
id	INT (PK)	Auto Increment
degree	VARCHAR	NOT NULL
branch	VARCHAR	NOT NULL
type	ENUM	('mini', 'major')
domain	VARCHAR	NOT NULL
title	VARCHAR	NOT NULL
description	TEXT	NULLABLE
technologies	VARCHAR/TEXT	NULLABLE
file_path	VARCHAR	NULLABLE (PDF path)
created_at	TIMESTAMP	DEFAULT CURRENT_TIME
updated_at	TIMESTAMP	DEFAULT CURRENT_TIME

3. Custom_Requirements

Column	Data Type	Constraints
id	INT (PK)	Auto Increment
user_id	INT (FK)	REFERENCES users(id)
title	VARCHAR	NOT NULL
description	TEXT	NULLABLE
technologies	VARCHAR/TEXT	NULLABLE
status	ENUM	('pending', 'approved', 'done')
document_path	VARCHAR	NULLABLE
created_at	TIMESTAMP	DEFAULT CURRENT_TIME

4. Inquiries

Column	Data Type	Constraints
id	INT (PK)	Auto Increment
name	VARCHAR	NOT NULL
email	VARCHAR	NOT NULL
phone	VARCHAR	NULLABLE
subject	VARCHAR	NOT NULL
message	TEXT	NOT NULL
type	ENUM	('contact', 'internship', 'training')
status	ENUM	('pending', 'resolved')
created_at	TIMESTAMP	DEFAULT CURRENT_TIME

5. PASSWORD_RESETS

Column	Data Type	Constraints
email	VARCHAR	NOT NULL
token	VARCHAR	NOT NULL
created_at	TIMESTAMP	DEFAULT CURRENT_TIME

6. Banner_Slides

Column	Data Type	Constraints
id	INT	Primary Key, Auto Increment
image_path	VARCHAR	NOT NULL
tagline	VARCHAR	NULLABLE
sub_text	TEXT	NULLABLE
cta_button_text	VARCHAR	NULLABLE
cta_button_link	VARCHAR	NULLABLE
is_active	BOOLEAN	Default TRUE
display_order	INT	NOT NULL
created_at	TIMESTAMP	Default CURRENT_TIMESTAMP
updated_at	TIMESTAMP	Default CURRENT_TIMESTAMP

7. Team_Members

Column	Data Type	Constraints
id	INT	Primary Key, Auto Increment
name	VARCHAR	NOT NULL
designation	VARCHAR	NOT NULL
bio	TEXT	NULLABLE
profile_picture_path	VARCHAR	NULLABLE
social_facebook	VARCHAR	NULLABLE
social_twitter	VARCHAR	NULLABLE
social_linkedin	VARCHAR	NULLABLE
display_order	INT	NOT NULL
is_active	BOOLEAN	Default TRUE
created_at	TIMESTAMP	Default CURRENT_TIMESTAMP
updated_at	TIMESTAMP	Default CURRENT_TIMESTAMP

8. Pricing_Packages

Column	Data Type	Constraints
id	INT	Primary Key, Auto Increment
service_type	ENUM / VARCHAR	('project', 'internship', 'training')
package_name	VARCHAR	NOT NULL
description	TEXT / JSON / HTML	NULLABLE
original_price	DECIMAL(10,2)	NOT NULL
discounted_price	DECIMAL(10,2)	NULLABLE
duration	VARCHAR	e.g., "4 Weeks"
button_link	VARCHAR	NULLABLE
is_featured	BOOLEAN	Default FALSE
created_at	TIMESTAMP	Default CURRENT_TIMESTAMP
updated_at	TIMESTAMP	Default CURRENT_TIMESTAMP

9. Site_Configurations

Column	Data Type	Constraints
id	INT	Primary Key, Auto Increment
config_key	VARCHAR	UNIQUE, NOT NULL
config_value	TEXT	NOT NULL (value for config key)
created_at	TIMESTAMP	Default CURRENT_TIMESTAMP
updated_at	TIMESTAMP	Default CURRENT_TIMESTAMP

10. Testimonials

Column	Data Type	Constraints
id	INT	Primary Key, Auto Increment
customer_name	VARCHAR	NOT NULL
customer_photo_path	VARCHAR	NULLABLE
designation	VARCHAR	NULLABLE
rating	TINYINT	Range 1-5
review_text	TEXT	NOT NULL
is_approved	BOOLEAN	Default FALSE
display_order	INT	NOT NULL
created_at	TIMESTAMP	Default CURRENT_TIMESTAMP
updated_at	TIMESTAMP	Default CURRENT_TIMESTAMP

11. Page_Meta_Tags

Column	Data Type	Constraints
id	INT	Primary Key, Auto Increment
page_route	VARCHAR	UNIQUE, e.g., "/", "/about", "/services"
meta_title	VARCHAR	NOT NULL
meta_description	TEXT	NULLABLE
meta_keywords	TEXT	NULLABLE
created_at	TIMESTAMP	Default CURRENT_TIMESTAMP
updated_at	TIMESTAMP	Default CURRENT_TIMESTAMP